

REMARKS

This responds to the Office Action dated July 20, 2010. Claims 1, 8, 11, 12, 13, 52, 62, 63, and 67 are amended, no claims are canceled, and no claims are added; as a result, claims 1-9, 11-13, 52, 53, and 62-70 are now pending in this application. Support for the amendments can be found in the specification in general, and at least in paragraphs [0025] and [0026].

Claim Objections

Claims 8, and 11 were objected to for a number of typographical errors. Applicant has amended claim 11 as suggested by the Examiner, and corrected the antecedent basis issue in claim 8. Reconsideration and withdrawal of the claim objections are respectfully requested.

The Rejection of Claims Under § 103

Claims 1-4 and 12 were rejected under 35 U.S.C. § 103(a) as being obvious over *Nishioka* (U.S. 5,489,548) in view of *Fazan* (U.S. 5,392,189). Claims 5-7 were rejected under 35 U.S.C. § 103(a) as being obvious over *Nishioka* (U.S. 5,489,548) in view of *Fazan* (U.S. 5,392,189), and further in view of *Park* (U.S. 5,837,593). Applicant respectfully submits that the claims are distinguishable over the cited references for at least the following reasons.

The rejection states that, *Nishioka* discloses “a second high-K dielectric layer including deposited components different from those in the first high-K dielectric layer” and cites column 9, lines 23-36 in support of this position. The rejection further states that, *Nishioka* discloses a support surface (42) remains substantially free of an oxide present in the plurality of high-K dielectric layers (44)” and cites column 4, lines 8-14 in support of this position.

Nishioka appears to recite material choice options for BST layer 44. The text in the table of column 9 recites “Other perovskite, pyroelectric, ferroelectric, or high-dielectric-constant oxides material (e.g. (Ba,Sr,Ca,Pb)(Ti,Zr)O₃, (Pb,La)(Zr,Ti)O₃, bismuth titanate, potassium tantalate, lead scandium tantalate, lead niobate, potassium niobate, lead zinc niobate, lead magnesium niobate, tantalum pentoxide, yttrium oxide). Donor, acceptor, or donor and acceptor doped oxides listed above. Combinations of the above materials. Layers of the above materials.”

Applicant respectfully submits that this list does not suggest multiple layers with different compositions. At best, it appears to list different materials that may be combined to form a single layer, or that a single material may be used to form multiple layers.

Nishioka does not appear to show a plurality of high-K dielectric layers positioned between the support surface and the conductive layer, including a first high K dielectric layer, and a second high K dielectric layer including deposited components different from those in the first high K dielectric layer.

Nishioka further recites “the sidewall spacer generally retards the diffusion of oxygen to the sidewall of the adjacent layer and underlying layers” (col. 4, lines 12-14). However, the sidewalls 40, 48, 52 do not appear to prevent oxidation at an interface between a dielectric layer and an electrode or support surface.

In contrast, claim 1 as amended recites wherein an interface between the support surface and the first high K dielectric layer remains substantially free of a support surface oxide present in the plurality of high-K dielectric layers.

Applicant respectfully submits that the additional cited references of Fazan and Park do not cure these deficiencies of Nishioka. Because the cited references, either alone or in combination, do not show every element of Applicant’s independent claims, a 35 USC §103(a) rejection is not supported by the references. Reconsideration and withdrawal of the rejection are respectfully requested with respect to Applicant’s claims 1-7 and 12 for the reasons stated above, and for dependent claims, at least as depending on an allowable base claim.

Claims 8, 9, 11, 52, 53, and 67-70 were rejected under 35 U.S.C. § 103(a) as being obvious over *Park* (U.S. 5,837,593) in view of *Fazan* (U.S. 5,392,189). Claims 13 and 62-66 were rejected under 35 U.S.C. § 103(a) as being obvious over *Tekehiro* (U.S. 6,403,441) in view of *Fazan* (U.S. 5,392,189). Applicant respectfully submits that the claims are distinguishable over the cited references for at least the following reasons.

As discussed in the response above, Applicant is unable to find in *Park*, *Fazan*, or *Tekehiro* any disclosure of a support surface or electrode that is substantially free of oxide at an interface as recited in the claims, as amended.

In contrast, claim 8 as amended recites a first high-K capacitor dielectric comprising tantalum pentoxide formed on a support surface, wherein an interface between the first high-K capacitor dielectric and the support surface is substantially free of a support surface oxide. Further in contrast, claim 12 as amended recites a support surface that remains substantially free of support surface oxides at an interface between the first high-K dielectric layer and the support surface. Further in contrast, claim 13 as amended recites wherein the first electrode layer remains substantially free of an electrode layer oxide at an interface between the electrode layer and the dielectric layer. Further in contrast, claim 52 as amended recites wherein a supporting surface remains substantially free of a supporting surface oxide at an interface between the supporting surface and the capacitor dielectric. Further in contrast, claim 62 as amended recites wherein an underlying layer oxide is substantially absent from an interface between the capacitor dielectric and the underlying layer. Further in contrast, claim 63 as amended recites wherein an underlying layer oxide is substantially absent from an interface between the capacitor dielectric and the underlying layer. Further in contrast, claim 67 as amended recites wherein an underlying layer oxide is substantially absent from an interface between the capacitor dielectric and the underlying layer.

Because the cited references, either alone or in combination, do not show every element of Applicant's independent claims, a 35 USC §103(a) rejection is not supported by the references. Reconsideration and withdrawal of the rejection are respectfully requested with respect to Applicant's independent claims 8, 12, 13, 52, 62, 63, and 67. Additionally, reconsideration and withdrawal of the rejection are respectfully requested with respect to the remaining claims that depend therefrom at least as depending on allowable base claims.

CONCLUSION


Applicants respectfully submit that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone the undersigned at (612) 373-6944 to facilitate prosecution of this application.

If necessary, please charge any additional fees or deficiencies, or credit any overpayments to Deposit Account No. 19-0743.

Respectfully submitted,

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Date 9-3-2010

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 3rd day of September, 2010.

Name Amy Moriarty

Signature 